

City of Boston Emergency Operations Plan

Extreme Temperatures Hazard Annex

Table of Contents

Table of Contents

EXTREME TEMPERATURES HAZARD ANNEX

Section 1 INTRODUCTION

1.1	Purpose	2
1.2	Scope.....	2
1.3	Policies.....	2

Section 2 SITUATION

2.1	Hazard Conditions	3
2.2	Assumptions	5

Section 3 CONCEPT OF OPERATIONS

3.1	General.....	6
3.2	Phases of Emergency Management	6
3.2.1	Mitigation	6
3.2.2	Preparedness	6
3.2.3	Response	7
3.2.4	Recovery	7

Section 4 ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

4.1	Organization	8
4.2	Primary Agencies.....	8
4.2.1	ESF #8 – Public Health and Medical.....	8
4.2.2	ESF #5 – Emergency Management	9
4.3	Support Agencies.....	9
4.3.1	ESF #1 – Transportation.....	9
4.3.2	ESF #2 – Communications	9
4.3.3	ESF #3 – Public Works.....	10
4.3.4	ESF #6 – Mass Care, Emergency Assistance, Housing and Human Services.....	10
4.3.5	ESF #12 – Energy.....	11
	ESF #13 – Public Safety and Security	12
4.3.6	ESF #15 – External Affairs.....	12
4.3.7	State Agencies	12
4.3.8	Nongovernmental Agencies.....	13

Section 5 DIRECTION, CONTROL, AND COORDINATION

Section 6 PLAN MAINTENANCE

Section 7 REFERENCES

EXTREME TEMPERATURES HAZARD ANNEX

Primary Agencies

Emergency Support Function (ESF) #8 – Public Health and Medical

- Boston Emergency Medical Services
- Boston Public Health Commission

ESF #5 – Emergency Management

- Office of Emergency Management

State Agencies

- Massachusetts Bay Transportation Authority (MBTA)

Nongovernmental Agencies

- American Red Cross

Support Agencies

ESF #1 – Transportation

- Boston Transportation Department

ESF #2 – Communications

- Department of Innovation and Technology

ESF #3 – Public Works

- Boston Parks and Recreation
- Boston Water and Sewer Commission
- Inspectional Services Department

ESF #6 – Mass Care, Emergency Assistance, Housing and Human Services

- Boston Centers for Youth & Family (BCYF)
- Commission on the Affairs of the Elderly
- Commission on Persons with Disabilities
- Office of Neighborhood Services

ESF #12 – Energy

- Office of Energy and Environment

ESF #13 – Public Safety and Security

- Boston Police Department (BPD)
- Boston Housing Authority

ESF #15 – External Affairs

- Mayor's Press Office
- Boston 311

1.1 Purpose

The purpose of this annex is to provide guidance for coordinating resources to support the City of Boston's (City) response to extreme temperature incidents (heat and cold). Coordinated response can mitigate the threat to public health and safety that may result from extreme temperature incidents.

1.2 Scope

The Extreme Temperatures Hazard Annex applies to all City departments with responsibilities for supporting response to extreme temperature incidents. This annex applies to all extreme temperature events.

1.3 Policies

Efficient response to extreme temperature conditions requires cooperation among many agencies, organizations, and individuals. City departments must be diligent in their efforts to protect the health and safety of Boston's residents.

2.1 Hazard Conditions

Extreme Heat

Extreme heat is the primary cause of weather-related fatalities in the United States. Historically, from 1979–2003, excessive heat exposure caused 8,015 deaths in the United States. During this period, more people in this country died from extreme heat than from hurricanes, lightning, tornadoes, floods, and earthquakes combined. In 2001, 300 deaths were caused by excessive heat exposure.

During the summer months, the City of Boston (City) is especially vulnerable to heat-related hazards. On summer days, the City can be as much as 16°F degrees warmer than its surrounding rural areas. The City's infrastructure, largely made up of asphalt, concrete, and metal, traps the heat. This is known as the "Urban Heat Island" effect. In 2010, there were 24 days in the City of Boston with recorded temperatures 90° F or greater.

Heat waves are particularly dangerous for children, seniors, people with cardiovascular disease, and people taking psychotropic and other medications. According to the Centers for Disease Control, social isolation and the inability to care for oneself put a person at greater risk for heat-related illness.

The City of Boston recognizes an extreme heat situation to exist when the National Weather Service (NWS) forecasts a heat index of 95° F or greater for 2 days or more.

During an extreme heat situation, depending upon the prevailing conditions, the City of Boston will issue any one of two types of alerts:

1. **Heat Advisory:** When the NWS forecasts a heat index of 95° F to 104° F for two days or more
2. **Excessive Heat Warning:** When the NWS forecasts a daytime heat index of 105°F or greater for two or more hours

Extreme Cold

Extreme cold is a dangerous situation that can bring on health emergencies, especially in susceptible populations such as homeless individuals, children, and the elderly. Wind chill factor, the combined effect of cold temperatures and wind speed, adds to the threat posed by low temperatures.

The City of Boston recognizes an extreme cold weather situation to exist when the National Weather Service (NWS) forecasts a wind chill of 0° F or below for three hours or more.

During an extreme cold weather situation, depending upon the prevailing conditions, the City of Boston will issue any one of three types of alerts:

3. **Extreme Cold Weather Advisory:** When the NWS forecasts a wind chill of 0° F to -14° F for three hours or more
4. **Wind Chill Advisory:** When the NWS forecasts a wind chill of -15° F to -24° F for three hours or more
5. **Wind Chill Warning:** When the NWS forecasts a wind chill of -25° F or colder for three hours or more

2.2 Assumptions

Extreme Heat

- Global climate change is expected to result in more frequent and intense heat waves. These intense heat waves will increase Boston's risk in the area of heat emergencies and vulnerability to the number of heat-related fatalities.
- The elderly, the very young, and people with mental illness and chronic diseases are at highest risk for heat-related illness. However, even young and healthy individuals can succumb to heat if they participate in strenuous physical activities during hot weather or do not take appropriate precautions.
- The probability of large-scale power outages is highest during the summer months and extended heat waves. Outages in apartment complexes and congregate care facilities could result in loss of air conditioning services and subsequently displace large numbers of individuals who will require a location to escape the heat.

Extreme Cold

- Extreme cold conditions may last for several days.
- The homeless and elderly populations in the City will be the most vulnerable to the effects of extreme cold.
- Frozen and burst pipes can be secondary events caused by extreme cold.
- The City of Boston has programs in place to prepare for extreme cold weather.

3.1 General

The Boston Emergency Operations Center (EOC) may be activated upon notification of an extreme temperature emergency to coordinate resources. The duration of extreme temperatures plays an important role in how people are affected. The City of Boston cooling centers and pools serve to reduce the risk to extreme heat exposure. Warming centers can reduce the risk of exposure of individuals to extreme cold temperatures.

3.2 Phases of Emergency Management

3.2.1 Mitigation

- Prepare to operate and promote warming and cooling centers before temperatures reach dangerous levels.

3.2.2 Preparedness

- Monitor National Weather Service (NWS) reports regarding potential extreme temperature conditions.
- Establish communications with stakeholders; develop and disseminate internal and external message regarding extreme temperature forecast.
- Prepare for likely contingencies (for example, building evacuations, shelter operations, etc.)
- Develop, install, and test adequate communications and warning systems throughout the community.
- Advise local departments to review and update mutual aid agreements.
- Coordinate public information on extreme temperature weather forecasts and implement notification procedures.
- Assist local departments in developing and maintaining sound emergency management plans. Recommend that there be frequent readiness review of neighborhood cooling and warming centers and pools.
- Designate suitable neighborhood emergency centers to serve as cooling and warming centers throughout the community and make their locations known to the public.
- Prepare to coordinate the possible evacuation and sheltering of at risk populations such as the homeless and the elderly.

3.2.3 Response

- Coordinate measures taken to preserve life and property. This includes such actions as the dispatch of rescue teams, the evacuation of affected populations due to extreme temperatures, and the management of emergency response for dealing with such problems as power outages, brown-outs, and lack of water.
- Coordinate requests for mutual aid as required.
- Provide information to citizens who require assistance in obtaining heat, cooling, water, food, or other necessities.
- Provide for the sheltering of displaced individuals, as necessary.
- Provide situation reports to the head of government and state emergency management area offices.
- Continue to monitor weather reports and weather-related incidents.
- Maintain communications with involved agencies.
- Provide weather and advisory/warning updates, as required.
- Open and operate cooling and warming centers for affected populations.

3.2.4 Recovery

- Restore power to effected business and residential communities.
- Coordinate resources to support agencies that control health and sanitation.
- Coordinate re-entry of evacuees.
- Additional information is available in the City of Boston Recovery Strategy.

Section 4

ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

4.1 Organization

The following section describes the roles and responsibilities of City of Boston (City) departments and partner agencies during extreme temperature events. In addition to these responsibilities, the City will work with community-based organizations such as Community Emergency Response Teams (CERTs), churches, and service organizations to make direct contact with at-risk individuals and to assist those in need. The City will also work directly with utility companies to ensure monitoring of system conditions as extreme temperature events develop.

4.2 Primary Agencies

4.2.1 ESF #8 – Public Health and Medical

Boston Public Health Commission

- Provide the Office of Emergency Management (OEM) and ESF #15 – External Affairs with information for press advisories regarding the effects of extreme cold/heat.
- Update and post extreme cold/heat safety tips/fact sheet on the Boston Public Health Commission (BPHC) website and link to Boston website.
- Monitor air quality alerts or advisories from state and federal agencies.
- Provide or request health coordination, assistance, information, and resources as necessary during emergency operations.
- Provide or request assistance and resources as necessary to maintain adequate health and sanitation conditions in warming/cooling centers and shelter facilities.
- Inspect food establishments affected by power outages.
- Control public health problems that may arise from extended heat waves or cold spells.
- Monitor Emergency Medical Support (EMS) calls/transport and hospital emergency rooms for heat-related illness and morbidity and report findings to OEM.
- Coordinate with ESF #15 and the BPHC emergency shelter commission to provide information concerning the homeless population (refer to Emergency Public Information Support Annex).
- Coordinate resources with the BPHC emergency shelter commission to conduct well-being checks for the homeless populations.
- Coordinate resources with the BPHC to address the shelter needs of the homeless.
- Ensure Mayor's Health Line is ready to take non-emergency calls for medical assistance

Boston Emergency Medical Services

- Coordinate resources to deploy misting tents as needed.
- Coordinate resources to support increased medical response needs during extreme temperature events.
- Consider proactive canvas of particularly vulnerable areas (high concentration of seniors; areas without power for long period of time)
- Ensure adequate supply of water for first responders

4.2.2 ESF #5 – Emergency Management

Office of Emergency Management

- Advise and assist the Mayor in the declaration of an extreme temperature emergency (cold/heat) and request for state and federal assistance.
- Activate the EOC as necessary.
- Develop and maintain the Boston EOP and all related extreme temperature response plans.
- Provide situation reports to the Mayor and other officials.
- Coordinate with the appropriate City departments to mobilize portable generators in case of power outages.
- Monitor National Weather Service for current forecast and notify city departments and response partners, as necessary.
- Coordinate with ESF #2 to implement alert and warning measures.
- Coordinate all EOC support actions in response to the extreme temperature emergency.
- Coordinate with ESF #15 for emergency public information.

4.3 Support Agencies

4.3.1 ESF #1 – Transportation

Transportation Department

- Coordinate resources to assist in transporting residents to/from cooling/warming centers.

4.3.2 ESF #2 – Communications

Department of Innovation Technology

- Activate alert/notification and warning systems as needed.
- Coordinate resources to support emergency response communications systems.

4.3.3 ESF #3 – Public Works

Boston Parks and Recreation

- Coordinate resources to operate spray features and splash parks as available.
- Post extreme temperature preparedness information in all facilities and make copies available for distribution to staff and public.
- Identify events at City Hall Plaza and Parks that may need to be cancelled based on extreme temperature conditions.
- Provide a list of open and working spray features or splash parks to OEM, Mayor's Press Office, Office of Neighborhood Services, BOS: 311 and Mayor's Health Line.
- Monitor availability of public drinking fountains.

Boston Water and Sewer Commission

- Supplement monitoring of open hydrants and coordinate with the Fire Department as needed to close hydrants.
- Protect public water supplies and provide temporary portable water resources (in case of frozen/ruptured pipes).
- Restore water and sewage disposal services to affected areas (in case of frozen/ruptured pipes).

Inspectional Services Department

- Anticipate redeployment of staff to assist with inspection of buildings with at-risk populations. Review departmental emergency recall procedures.
- Notify property owners for whom the department has contact information of Extreme Temperature Watch and distribute information with instructions to post in all buildings.
- Prioritize inspection requests for buildings over eight (8) units with reports of limited or no air conditioning or heating, including apartment buildings, shelters, Single Room Occupancy (SRO) hotels, and other group living arrangements.

4.3.4 ESF #6 – Mass Care, Emergency Assistance, Housing and Human Services

Boston Centers for Youth and Families

- Anticipate the use of available community facilities as cooling and warming centers.
- When instructed, submit an updated list of cooling and warming centers with capacity and current status to OEM, Mayor's Press Office, BOS: 311, Office of Neighborhood Services and Mayor's Health Line.
- Activate cooling and warming centers, when requested.
- Coordinate resources to operate warming centers/cooling centers and pools. Continue pool operations during extended hours as needed.

- Mobilize additional staff, as needed for extended cooling and warming center hours and additional opening of cooling and warming centers.
- Coordinate with ESF #1 – Transportation to arrange transportation for residents to/from cooling and warming centers.
- Provide facility for emergency shelter care of displaced individuals.
- Coordinate with Boston Public Schools to ensure proper access to facilities.

Commission on the Affairs of the Elderly

- Contact nutrition vendors, home care agencies, and visiting nurses associations for telephone and in-person checks on bed-ridden, homebound, and chronically ill elders.
- Consider use of auto call from the Mayor to all seniors urging they take extra precautions and provide information on available services. During a declared advisory for an extreme cold or heat emergency, release auto call to all seniors.
- Home care agencies advised to set up telephone trees for clients at risk.
- Senior shuttle fleet mobilized for transportation to cooling and warming centers.
- Conduct telephone well-being checks for seniors who request calls.
- Monitor all nursing homes.
- Instruct nursing homes with limited air conditioning and/or heating capabilities to plan for initiation of their cooling or heating plans.

Commission on Persons with Disabilities

- Notify agencies, service providers, delegate agencies, and individuals of potentially dangerous conditions and inform them of available services.
- Instruct contracted delegate agencies/service providers to contact people with disabilities who have requested a well-being check.
- If needed, refer clients for well-being checks through BOS: 311

Office of Neighborhood Services

- Distribute a heat advisory/warning press release and fact sheet to neighborhood groups.
- Monitor neighborhoods for power outages in areas that contain vulnerable populations and identify areas to the hotline for intervention by EMS and other responders.

4.3.5 ESF #12 – Energy

Office of Energy and Environment

- Monitor NSTAR electric system load and redundancy and report to OEM.
- Maintain regular communication and act as the City's liaison with NSTAR.

ESF #13 – Public Safety and Security

Boston Police Department (BPD)

- Coordinate resources to assist in making outreach to senior citizens to advise them of preventive measures, location of cooling and warming centers, and other assistance.
- Assist in identifying homeless individuals that may need assistance from a warming/cooling center.

Boston Housing Authority (BHA)

- Alert building managers, tenant patrols, BHA police, and volunteers in all senior buildings and manager/delegate agencies housed in other BHA buildings to begin distributing extreme temperature preparedness information.
- Verify that air conditioners in the day rooms of senior buildings are functioning and that bottled water is available.
- Review plans for transfer of at-risk BHA residents in non-senior buildings to designated cooling and warming centers.
- Verify that the generators in all senior buildings are functional and report findings to OEM.
- Coordinate with ESF #11 – Food and Water to provide bottled water in all senior buildings.

4.3.6 ESF #15 – External Affairs

Mayor's Press Office

- Issue press statements for extreme temperature advisories and warnings, list of cooling and warming centers and post public health advice.
- Coordinate with the Mayor's 24-hour hotline regarding information disseminated to the public and City departments.
- Coordinate with Web services to update City of Boston website with extreme temperature advisories and warnings, list of currently opened cooling and warming centers and post extreme cold/heat safety tips/fact sheet.
- Develop and disseminate emergency public information and instructions.
- Update social media

BOS: 311

- Operate 311 and provide information to the public about warming/cooling centers, open pools, and other means to mitigate the impact of the extreme temperature incident.
- Provide information on reported power outages to OEM.

4.3.7 State Agencies

Massachusetts Bay Transportation Authority

- Make buses available to transport residents or to be used as cooling and warming centers upon the request of OEM.

4.3.8 Nongovernmental Agencies

American Red Cross

- Coordinate emergency shelter care, including bedding, feeding, and other amenities for evacuees and stranded individuals.
- Coordinate with Boston Centers for Youth and Families (BCYF) to identify and register shelter individuals.
- Coordinate welfare and related services.

Section 5

DIRECTION, CONTROL, AND COORDINATION

OEM is responsible for coordinating resources to support response to extreme temperature emergencies. OEM will coordinate the operation of the EOC and work in cooperation with representatives of all involved local departments during the extreme temperature emergency. OEM will advise elected and appointed officials of the progress of events during the emergency.

The EOC is responsible for coordinating resources to support the extreme temperature response for the City of Boston. The EOC facilitates this effort by coordinating the response activities of various city departments and external agencies.

Section 6

PLAN MAINTENANCE

OEM is responsible for the maintenance of this annex in accordance with Policy OEM-2011-001-RevB. Revisions to this annex will be reviewed and approved by the appropriate department heads and the OEM Director. Departments, agencies, and organizations specified in this annex are required to prepare and update internal response plans and maintain an adequate level of readiness of their plans in cooperation with OEM.

Section 7

REFERENCES

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